UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,920	11/21/2001	Roberto A. Macina	DEX-0291	2846

7590 06/06/2005

Licata & Tyrrell P.C.
66 East Main Street
Marlton, NJ 08053

EXAMINER	
YU, MISOOK	
ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/989,920	MACINA ET AL.	
	Examiner	Art Unit	
	MISOOK YU, Ph.D	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5, 7, 8, 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,8 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Exhibit E*.

DETAILED ACTION

Applicant's reply filed on 03/09/2005 is acknowledged. Claims 1, 8, and 15 are amended. Claims 1-5, 7, 8, and 15 are pending and under consideration.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification, Withdrawn

The objection of disclosure due to embedded hyperlink and/or other form of browser-executable code is withdrawn in view of the amendment.

Claim Objections, Withdrawn

Objection of claims 1-5, 7, 8, and 15 is withdrawn in view of the amendment.

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-5, 7, 8, and 15 of this application. The U.S. Provisional Application Serial No. 60/252,500, filed November 21, 2000 does not have support for the instantly claimed invention, i.e. an isolated nucleic acid molecule comprising the instant SEQ ID NO: 100.

Claim Rejections - 35 USC § 101, Maintained

Claims 1-5, 7, 8, and 15 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a substantial utility, or a well established utility.

The amended claim 1-5, 7, and 15 are drawn to SEQ ID NO: 100 nucleic acid, kit containing said nucleic acid, vector containing said nucleic acid, an isolated host cell containing said vector.

Applicant argues that the U.S. Provisional Application Serial No. 60/252,500, filed November 21, 2000, which the instant application claims benefits, discloses SEQ ID NO: 61 corresponding to instant SEQ ID NO: 99, which is a lung cancer marker. SEQ ID NO: 100 is the flex sequence of SEQ ID NO: 99 being a lung cancer specific marker, which constitutes a substantial utility.

These arguments have been fully considered but found unpersuasive. The provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-5, 7, 8, and 15 of this application. Therefore, the priority is denied and applicant argument using the Provisional Application Serial No. 60/252,500 is not persuasive.

As for applicant's argument that SEQ ID NO: 100 is the flex sequence of SEQ ID NO: 99, which has utility as a lung cancer marker, it is noted that applicant elected SEQ ID NO: 100, not SEQ ID NO: 99 for examination on merits. For a record, a "flex sequence" does not appear to be a term understood by an art. In order to understand the relationship between SEQ ID NO: 99, and 100, the Office aligned SEQ ID NO: 99 with SEQ ID NO: 100. Note the attached Exhibit E (the alignment). As Exhibit E shows, the instant SEQ ID NO: 100 has 63.9 % sequence identity to SEQ ID NO: 100. The specification does not teach instant SEQ ID NO: 100 is a lung cancer marker. Arguing with SEQ ID NO: 99 is considered as an argument not commensurate in scope of

claims. Also note the paragraph bridging pages 24 and 25 of the response filed on 09 March 2005. Applicant argues in traversing the art rejection of record that nucleic acid sequence having 94. 6 % sequence identity to the instant SEQ ID NO: 100 is outside the scope of the instantly claimed invention.

As stated in the previous Office action, the specification speculates that SEQ ID NO: 100 might have utilities in making protein, making antibody, diagnostic and staging assays for lung cancer or non-cancerous diseases (at pages 93-103) or detecting a risk of cancer or presence of cancer (claim 15), method of identifying lung tissue (page 103), method of producing and modifying lung tissue such as making an artificial lung (at pages 104-105), pharmaceutical (page 105) in gene therapy and antisense therapy (pages 111-113).

These utilities are not considered to substantial enough because neither the specification nor any art of record teaches what the biological activities of SEQ ID NO: 100 are. The specification at page 6, lines 12-27 teaches that the disclosed nucleic acids are lung specific. An assay to tell whether one has lung i.e. lung tissue typing is not considered a substantial enough utility. The specification asserts that the differential expression of the sequence is used for lung cancer detection. However, the specification does not teach whether the claimed nucleic acid is under-expressed or overexpressed in lung cancer. The specification does not teach a relationship to any specific disease or establish any involvement SEQ ID NO: 100. The specification does not teach which protein is encoded by SEQ ID NO: 100, let alone substantial or specific use for it. None of the protein sequences disclosed in the instant application is encoded

by instant SEQ ID NO: 100. Note the Exhibit A. Making and purifying the protein encoded by SEQ ID NO: 100 does not lead to a substantial use of the claimed invention because neither the specification nor the art appears to know what the structure of the protein encoded by the claimed invention. In fact, GenBank Accession No. AC079988 (gi: 18873965, #DI of IDS filed on 10/29/2004) teach a genomic DNA i.e. human BAC clone RP11-795C1 (form chromosome 2) having 98.7 % sequence identity to instant SEQ ID NO: 100. Note the sequence alignment of instant SEQ ID NO: 100 against GenBank Accession No. AC079988 (Exhibit B). Further, GenBank Accession No. AC079988 teach that this clone is from RPCI-11 human BAC library prepared from the blood of one male donor as disclosed in The Sanger Center and The Washington University Genome Sequencing Center (DC of IDS filed on 10/29/2004, 1998, Genome Research, vol. 8, pages 1097-1108. The Sanger Center and The Washington University Genome Sequencing Center teaches that the library was constructed for sequencing human genome, and it is not cDNA library. Therefore, SEQ ID NO: 100 is most likely a genomic sequence, not specific for lung only but present in every cell of human body that contains chromosome 2.

The asserted utilities as hybridization probes, antisense, the various assays numerated in the instant application do not lead to substantial and credible uses of the claimed invention due to unknown functions of the protein encoded by the claimed invention. Nothing is specific to the sequences of the claimed invention for all of the various probe uses. Any nucleic acid can be used to, identify polymorphisms, map chromosomes, type a tissue, make transgenic animals or knockout animals. The

specification does not have any substantial use for pharmaceutical compositions, diagnostic assay, and methods of treatment because the specification does not teach what disease(s) is caused by malfunction of the claimed invention or the protein encoded by it. Since EQ ID NO: 100 does not have a substantial utility, or a well established utility, a compound that binds to SEQ ID NO: 100 does not have a substantial utility, or a well established utility.

In Brenner v. Manson, 148 U.S.P.Q. 689 (Sup. Ct., 1966), a process of producing a novel compound that was structurally analogous to other compounds which were known to possess anti-cancer activity was alleged to be useful because the compound produced thereby was potentially useful as an anti-tumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are "useful" to the chemical arts when this term is given its broadest interpretation. However, the court held that this broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. § 101, which requires that an invention must have either an immediately obvious or fully disclosed "real world" utility. The instant claims are drawn to SEQ ID NO: 100 which has undetermined function or biological significance. Until some actual and specific activity can be attributed to the nucleic acid or the protein encoded by the claimed invention encoding it, the claimed invention is incomplete.

Claims 1-5, 7, 8, and 15 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a substantial

asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112, Maintained

Claims 1-5, 7, 8, and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-5, 7, 8, and 15 are interpreted as drawn to a genus of nucleic acid molecules with various of degrees of variations from SEQ ID NO: 100, a genus of vectors containing said nucleic acid molecules, genus of host cells containing said vectors.

Applicant argues that the amended claims satisfy the written description requirement because the claims are limited to specific nucleic acid sequence or part thereof and sequences with shared identity thereto, which hybridizes, or naturally occurring allelic variants.

These arguments have been fully considered but found unpersuasive because the amended claims are drawn to genus of nucleic acid that applicant did not posses at the time the specification was filed. For example, the court has determined that allelic variants of a gene does not satisfy written description requirement unless applicant at the time the application is filed described what the exact sequence looks like. It is the law that the patent application should inform one of skill in the art what the applicant has

discovered, not how to screened the product. In addition, the only factor present in the amended claims is a partial structure in the form of percent identity or hybridization. There is not even identification of any associated function with the claimed genus of partial structures. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Claims 1-5, 7, 8, and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the **enablement requirement**. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The factors considered when determining if the disclosure satisfies the enablement requirement and whether any necessary experimentation is □undue□ include, but are not limited to: 1) nature of the invention, 2) state of the prior art, 3) relative skill of those in the art, 4) level of predictability in the art, 5) existence of working examples, 6) breadth of claims, 7) amount of direction or guidance by the inventor, and 8) quantity of experimentation needed to make or use the invention. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

This enablement rejection is made based on the interpretation of the claims as drawn to an isolated nucleic acid molecule comprising SEQ ID NO: 100, a nucleic acid

that selectively hybridizes, or at least 95 % sequence identity to instant SEQ ID NO: 100 (for use in lung cancer detection (note pages 93-103, abstract).

Applicant argues that the Provisional Application 60/252.500 that the instant application claims priority benefit, discloses that SEQ ID NO: 100 is a lung specific marker. This argument has been considered fully but found unpersuasive. As stated above under the heading Priority, and utility rejection, the provisional application does not even disclose SEQ ID NO: 100, let alone SEQ ID NO: 100 being established as a lung cancer specific, as applicant argues now.

Applicant further argues that one of ordinary skill could screen nucleic acid sequences 95 % identical to or hybridizing under the recited conditions to the instant SEQ ID NO: 100. These arguments have been fully considered but found unpersuasive because the law requires that the disclosure of an application shall inform those skilled in the art how to make the alleged discovery, not how to screen it for themselves.

As stated in the previous Office action, the specification does not teach whether SEQ ID NO: 100 is over-expressed or under expressed in lung cancer or any other lung disease, let alone a nucleic acid that selectively hybridizes, or at least 95 % sequence identity to instant SEQ ID NO: 100 being over-expressed or under-expressed in any lung disease including lung cancer. The specification provides neither guidance on nor exemplification of how to correlate the data presented in the specification with the ability to use SEQ ID NO: 100 for the assessment of cancer risk. In other words, the specification does not present any in vivo data to correlate either detection of the nucleic acid or absence of the nucleic acid to growth of any tumor.

Tockman et al (Cancer Res., 1992, 52:2711s-2718s) teach considerations necessary in bringing a lung cancer biomarker to successful clinical application. Tockman et al teach that prior to the successful application of newly described lung cancer markers, research must validate the markers against acknowledged disease end points, establish quantitative criteria for marker presence/absence and confirm marker predictive value in prospective population trials (see abstract). Early stage markers of tumorigenicity have clear biological plausibility as markers of preclinical cancer and if validated can be used for population screening (p. 2713s, col 1). The reference further teaches that once selected, the sensitivity and specificity of the biomarker must be validated to a known (histology/cytology-confirmed) cancer outcome. The essential element of the validation of an early detection marker is the ability to test the marker on clinical material obtained from subjects monitored in advance of clinical cancer and link those marker results with subsequent histological confirmation of disease. This irrefutable link between antecedent marker and subsequent acknowledged disease is the essence of a valid intermediate end point marker (p. 2714, see Biomarker Validation against Acknowledged Disease End Points). Clearly, prior to the successful application of newly described markers, markers must be validated against acknowledged disease end points and the marker predictive value must be confirmed in prospective population trials (p. 2716s, col 2). The specification provides insufficient guidance, and provides no working examples of correlating in lung cancer to either detection of SEQ ID NO: 100 or to absence of SEQ ID NO: 100, which would provide guidance to one skilled in the art to use the claimed invention without undue experimentation. Considering lack of

examples and the limited teachings of the specification, and unpredictability in the art, it is concluded that undue experimentation would be required to practice the claimed invention.

Claim Rejections - 35 USC § 102, Maintained

Claims 1-5, 7, 8, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. 6,368,794 B1 (issued April 09, 2002, filed Jan. 15, 1999).

The claims are interpreted as drawn to an isolated nucleic acid molecule comprising a nucleic acid that selectively hybridizes under the recited conditions to SEQ ID NO: 100 (claim 1), wherein said nucleic acid molecule is a cDNA (claim 2), genomic DNA (claim 3), a mammalian nucleic acid molecule (claim 4), a human nucleic acid molecule (claim 5), in a vector (claim 7), in a host cell comprising said vector (claim 8), and a kit comprising a means of for determining the presence of said nuclei acid.

Applicant argues that the amended claims drawn to at least 95 % homology, are no longer anticipated by the art of record because the art of record does not teach a nucleic sequence having at least 95 % homology to the instant SEQ ID NO: 100.

This argument has been fully considered but found unpersuasive. As stated in the previous Office action, US Pat. 6,368,794 B1 teaches SEQ ID NO: 3, which is a 1853 nucleotides having 99.8 % sequence identity to nucleotides 994 to 2747 of instant SEQ ID NO: 100. Note previously provided sequence alignment of instant SEQ ID NO: 100 against SEQ ID NO: 3 of US Pat. 6,368,794 B1 (Exhibit C). It is the Office's position that the sequence of the prior art would hybridize to the instantly recited conditions since it is 99.8 % identical close to 2 KB nucleic acid sequence. The Office

does not have the facilities and resources to provide the factual evidence needed in order to establish that the nucleic acid of the prior art does not possess the same material, structural and functional characteristics of the instantly claimed nucleic acid. In the absence of evidence to the contrary, the burden is on the applicant to prove that the claimed nucleic acid is different from those taught by the prior art and to establish patentable differences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989).

Claims 1, 3-5, 7, 8, 15, and 17 are rejected under 35 U.S.C. 102(**a**) as being anticipated by GenBank Accession No. AC079988 (gi: 10800346 with public availability date of 10/14/2000 online, IDS #DI filed on 10/29/04).

The claims are interpreted as drawn to an isolated nucleic acid molecule comprising a nucleic acid that selectively hybridizes or at least 60 % sequence identity to instant SEQ ID NO: 100 (claim 1), wherein said nucleic acid molecule is genomic DNA (claim 3), a mammalian nucleic acid molecule (claim 4), a human nucleic acid molecule (claim 6), in a vector (claim 7), in a host cell comprising said vector (claim 8), kit comprising a means to detect the nucleic acid of claim 1.

Applicant argues that the amended claims are drawn to nucleic acid having at least 95 % sequence identity to SEQ ID NO: 100, thus the nucleic acid sequence of GenBank Accession No. AC079988 having only 4.6 % sequence identity to instant SEQ ID NO: 100 does not anticipate the amended claims.

This argument has been fully considered but found unpersuasive because applicant's argument is not commensurate in the scope of the claims as currently construed. The full scope includes nucleic acid that hybridizes to SEQ ID NO: 100. As the previously provided sequence alignment (Exhibit D) shows, GenBank Accession No. AC079988 teach a human chromosome 2 clone RP11-795C1, which is isolated from the human BAC library RPCI-11 according to AC079988 (gi: 18873965), which contains an insert having 94.6 % sequence identity to instant SEQ ID NO: 100.

It is the Office's position that the sequence of the prior art would hybridize to the instantly recited conditions since it is 99.8 % identical close to 2 KB nucleic acid sequence. The Office does not have the facilities and resources to provide the factual evidence needed in order to establish that the nucleic acid of the prior art does not possess the same material, structural and functional characteristics of the instantly claimed nucleic acid. In the absence of evidence to the contrary, the burden is on the applicant to prove that the claimed nucleic acid is different from those taught by the prior art and to establish patentable differences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989).

As for claims 7, and 8, Voet et al., (1900, Biochemistry, John Wiley & Sons, pages 839-844) teach that a clone is in a host cell containing a nucleic acid of insert in an appropriate vector.

As for claims 15, the intended use in claim 15, and the preamble recitation in claim 17 are merely suggestive of an intended use and is not given patentable weight

for purposes of comparing the claim with the prior art. The claim reads on nucleic acids *per se,* and a means *per se*.

Thus, GenBank Accession No. AC079988 anticipates claims 1, 3-5, 7, 8, 15.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MISOOK YU, PhD whose telephone number is 571-272-0839. The examiner can normally be reached on 8 A.M. to 5:30 P.M., every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MISOOK YU, PhD
Examiner
Art Unit 1642

JEFFREY SIEW
SUPERVISORY PATENT EXAMINER
5/31/05

GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: May 25, 2005, 08:19:19 ; Search time 1 Seconds
(without alignments)
5.288 Million cell updates/sec

Title: us-09-989-920-99
Perfect score: 960
Sequence: 1 atgctcgagccggcgcatat.....ccaccaccagcaccaccacc 960

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 0.5

Searched: 1 seqs, 2754 residues

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 1 summaries

Database : us-09-989-920-100:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	613.9	63.9	2754	1	us-09-989-920-100	

ALIGNMENTS

RESULT 1
us-09-989-920-100

Query Match 63.9%; Score 613.9; DB 1; Length 2754;
Best Local Similarity 99.4%; Pred. No. 0;
Matches 646; Conservative 0; Mismatches 1; Indels 3; Gaps 3;

```
Qy        41 GTACCTTGGGGACTGAGGACCTTTTGGCTTCTCTGGAGCCTGCAAGCCTCTTCCCATGTG 100
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1658 GTACCTTGGGGACTGAGGACCTTTTGGCTTCTCTGGAGCCTGCAAGCCTCTTCCCATGTG 1717

Qy       101 TCCAGCTGCTCTTCCTGCTACAAAGGGGACTGCTCACAGTGGCCTCAGCTTGGTGGTTTT 160
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1718 TCCAGCTGCTCTTCCTGCTACAAAGGGGACTGCTCACAGTGGCCTCAGCTTGGTGGTTTT 1777

Qy       161 GAGGGGCCGCCCCCCGGCCCTCCATAAGGGTATCCTGGGCCTGAGAATTCTGCATCTGCC 220
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1778 GAGGGGCCGCCCCCCGGCCCTCCATAAGGGTATCCTGGGCCTGAGAATTCTGCATCTGCC 1837

Qy       221 ATTGGAGGATGGACAGCCTCAAATGGAAGGAGTCCCACGGGAGATGGGTCCGAGGTCCGG 280
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1838 ATTGGAGGATGGACAGCCTCAAATGGAAGGAGTCCCACGGGAGATGGGTCCGAGGTCCGG 1897

Qy       281 CTGTGGCCATCCAGCCCCCTGTGGCTTGTCCAGCCTCTGTGCACCCCTGGTGTCTTCACT 340
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1898 CTGTGGCCATCCAGCCCCCTGTGGCTTGTCCAGCCTCTGTGCACCCCTGGTGTCTTCACT 1957

Qy       341 CCAGGGGCAGACAGCAGCCACTGCAGTTCCTTTCTTCGTGAGTAACAGTAGTGATAGCAG 400
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1958 CCAGGGGCAGACAGCAGCCACTGCAGTTCCTTTCTTCGTGAGTAACAGTAGTGATAGCAG 2017

Qy       401 CTGGGGCTAACAGGCTAGGCTTTGTGTTCTGCGCATTTGGTCAGCTTCTCACTCGATCCT 460
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2018 CTGGGGCTAACAGGCTAGGCTTTGTGTTCTGCGCATTTGGTCAGCTTCTCACTCGATCCT 2077

Qy       461 CCCTAAAGCAATGGGGAGGCCCCCACTAGCCCAGTTTTCAGGAAGTCAACTGGGAGGTTA 520
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2078 CCCTAAAGCAATGGGGAGGCCCCCACTAGCCCAGTTTTCAGGAAGTCAACTGGGAGGTTA 2137

Qy       521 GATGGGGGCCAGGGTCCCACATGCTGCTGATGGCCCGAGCCAGGTTGAGCTTCCTGGTGT 580
             |||||||||||||||||||| ||| ||||||||||||||||||||||||||||||||||||
Db      2138 GATGGGGGCCAGGGTCCCACA-GCTACTGATGGCCCGAGCCAGGTTGAGCTTCCTGGTGT 2196

Qy       581 CCAGTCCGGATCCCCACTTGCAGATCTCATGCTCTCAGATAGGTGGGACAAGTTCTTTTG 640
             |||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2197 CCAGTCCGGAT-CCCACTTGCAGATCTCATGCTCTCAGATAGGTGGGACAAGTTCTTTTG 2255

Qy       641 TCACAGTGCTGGCCTCTGTCCTGAGGCCTCATTGCTGGCTGGGTGTGCTC 690
             |||||||||||| ||||||||||||||||||||||||||||||||||||
Db      2256 TCACAGTGCTGG-CTCTGTCCTGAGGCCTCATTGCTGGCTGGGTGTGCTC 2304
```

Search completed: May 25, 2005, 08:19:20
Job time : 1 secs